

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) Apparatus for removing material from a workpiece, said apparatus comprising:

an abrasive wheel having an abrasive circumferential surface and rotatable about a first axis passing through a centre thereof, and mounted to orbit about a second axis spaced from the first axis;

means for effecting relative advancing movement between the second axis and the workpiece to remove material from the workpiece;

means for detecting a load applied to said wheel by said workpiece; and

means for controlling the rate of the advancing movement depending on the magnitude of the detected load, said control means comprising means for monitoring the magnitude of the detected load during the removal of material at each of a plurality of spaced locations along the workpiece.

2. (Original) Apparatus according to Claim 1, wherein the detecting means comprises means for monitoring a current drawn to move the abrasive surface of the wheel relative to the workpiece.

3. (Previously amended) Apparatus according to Claim 1, wherein the detecting means comprises means for monitoring a current drawn to rotate the wheel.

4. (Original) Apparatus according to Claim 2 or 3, wherein the control means is arranged to reduce the rate of the advancing movement when said current is greater than a predetermined value.

5. (Previously amended) Apparatus according to Claim 1, wherein the control means is arranged to reverse said advancing movement when said detected load is greater than a predetermined value for a predetermined period of time.

6. (Cancelled)

7. (Previously amended) Apparatus according to Claim 5, wherein the control means is arranged to subsequently re-effect the relative advancing movement between the second axis and the workpiece when said detected load falls below a predetermined value.

8. (Cancelled)

9. (Currently amended) Apparatus according to Claim 8 1, wherein the control means is arranged to control the positioning of the wheel in preparation for the removal of material from one of said spaced positions in response to wear of the wheel during the previous removal of material from at least two of said spaced positions.

10. (Original) Apparatus according to Claim 9, wherein the monitoring means is arranged to detect the extent of the wear of the wheel from the relative positions of the wheel when contact is first made with the workpiece during said previous removal of material.

11. (Previously amended) Apparatus according to Claim 9, wherein the monitoring means is arranged to detect the extent of the wear of the wheel from the relative positions of the wheel when load applied to the wheel is first detected during said previous removal of material.

12-18 (Cancelled)

19. (Currently amended) A method of removing material from a workpiece, said method comprising the steps of:

rotating an abrasive wheel having an abrasive circumferential surface about a first axis passing through a centre thereof;

orbiting the wheel about a second axis spaced from the first axis;

effecting relative advancing movement between the second axis and the workpiece to remove material from the workpiece;

detecting a load applied to said wheel by said workpiece;
and

controlling the rate of the advancing movement depending on the magnitude of the detected load; and

monitoring the magnitude of the detected load during the removal of material at each of a plurality of spaced positions along the workpiece.

20. (Original) A method according to Claim 19, wherein the load applied to the wheel by the workpiece is detected by

monitoring a current drawn to move the abrasive surface of the wheel relative to the workpiece.

21. (Previously amended) A method according to Claim 19, wherein the load applied to the wheel by the workpiece is detected by monitoring a current drawn to rotate the wheel.

22. (Original) A method according to Claim 20 or 21, wherein said rate of advancing movement is reduced when said current is greater than a predetermined value.

23. (Previously amended) A method according to Claim 19, wherein the advancing movement is reversed when the detected load is greater than a predetermined value for a predetermined period of time.

24. (Cancelled)

25. (Previously amended) A method according to Claim 23, wherein the advancing movement is subsequently re-effected towards the workpiece when the detected load falls below a predetermined value.

26. (Cancelled)

27. (Currently amended) A method according to Claim ~~26~~ 19, wherein the positioning of the wheel in preparation for the removal of material from one of said spaced positions is controlled in response to wear of the wheel during the previous removal of material from at least two of said spaced positions.

28. (Original) A method according to Claim 27, wherein the extent of the wear of the wheel is detected from the relative

positions of the wheel when the magnitude of the detected load reaches a predetermined value during said previous removal of material.

29. (Previously amended) A method according to Claim 27, wherein the extent of the wear of the wheel is detected from the relative positions of the wheel when load applied to the wheel is first detected during said previous removal of material.

30-38 Cancelled